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Abstract

This project was designed to evaluate 18 strawberry cultivars for their adaptation and fruit quality in Iowa. Cultivar selection is an important component of successful strawberry production and this evaluation provides information about recently released cultivars and germplasm of interest to commercial growers and homeowners.

Keywords

Horticulture

Disciplines

Agricultural Science | Agriculture | Fruit Science | Horticulture

Strawberry Cultivar Trial

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Introduction

This project was designed to evaluate 18 strawberry cultivars for their adaptation and fruit quality in Iowa. Cultivar selection is an important component of successful strawberry production and this evaluation provides information about recently released cultivars and germplasm of interest to commercial growers and homeowners.

Materials and Methods

2004. Plots were established on May 10 with 15 plants set 18 in. apart within the row, and rows were spaced 4 ft apart. Runner plants were allowed to develop a 2-ft-wide matted row. Plants were mulched with 4 in. of straw for winter protection in December. The experimental design was a randomized complete block with three replications.

2005. Straw mulch was removed on April 5 and plants were fertilized with nitrogen (N) (34-0-0) to provide sufficient N for plant growth and development for growing on a coarse sandy soil. Unusually warm spring temperatures were conducive to early strawberry plant growth. Late spring freezes occurred on May 2 (28°F), May 3 (23°F) and May 4 (27°F). Overhead irrigation for frost protection was not available and many primary flowers were killed. Plants were harvested from June 13–27 and the planting was renovated using conventional practices on June 30.

2006. Straw mulch was raked off plants on April 15 and nitrogen (46-0-0) applied to plots at 25 lb N/acre. A light freeze (31°F) occurred

on April 26, but plants were protected by a spun-bonded polyester plant cover. Strawberries were harvested June 6–23 then plots were renovated and Dacthal herbicide applied.

2007. Unusually warm temperatures causing plant growth necessitated mulch removal on March 28. Nitrogen was sidedressed at 30 lb/acre. Trial harvest took place May 24–June 15. Trial was terminated and plots were tilled after harvest.

Results and Discussion

Due to unfavorable weather (damaging spring freezes) and site location (sandy, irrigated soil) trial yields were lower than expected, however, clear differences between cultivars for yield and fruit quality were recorded. Jewel, because of its consistent production of attractive, good quality fruit, was the standard to beat in this evaluation. St. Pierre, Cavendish, 91.80.2, and Canoga also showed merit producing above average yields of marketable berries. Darselect deserves mention because of its pleasant sweet flavor, that was comparable to Allstar, but with more appealing attractive berries. Allstar, at this location, had a tendency to produce orange berries with a rough distorted shape. The experimental line, 88.74.1, produced exceptionally large berries but primary berries were often irregularly shaped and hollow. The line 88.74.1 and Cabot had very limited runner production and did not form wide matted rows like the other cultivars. Early season cultivars Northeastern, Evangeline, Brunswick, and Honeoye were hurt by cold spells each spring that damaged primary flowers resulting in lower yields and average berry size. Additional comments on cultivars are found in Table 2.

Table 1. Strawberry cultivar yield and berry size for 2005, 2006, and 2007, Fruitland, IA.

Cultivar	2005-2007 Total yield lb/acre	2005 Yield lb/acre	2006 Yield lb/acre	2007 Yield lb/acre	2005 Avg. berry wt (lb)	2006 Avg. berry wt (lb)	2007 Avg berry wt (lb)
Jewel	24,144	6,212	11,363	6,569	9.1	10.6	10.5
88.74.1	20,412	7,511	6,347	6,554	21.8	14.1	13.6
91.80.2	20,207	6,890	7,055	6,262	9.9	9.9	12.8
St. Pierre	19,898	7,416	6,657	5,825	9.3	10.1	10.3
Cavendish	19,258	7,366	7,349	4,543	11.7	10.9	11.8
Canoga	18,514	8,464	6,360	3,690	8.5	10.9	15.7
Seneca	17,325	6,942	6,482	3,901	12.1	9.7	11.7
Darselect	16,826	7,033	6,512	3,281	10.0	8.7	10.9
Allstar	16,161	5,726	5,472	4,963	6.9	9.7	9.4
Eros	15,848	6,992	4,280	4,576	11.1	10.0	10.8
Ovation	15,575	6,484	6,084	3,007	10.6	9.9	11.4
Honeoye	14,831	3,208	6,135	5,488	6.4	7.7	8.2
Brunswick	13,826	3,086	5,954	4,786	8.2	8.9	11.0
Clancy	13,389	2,262	6,359	4,768	6.9	8.8	11.7
Cabot	12,698	4,955	5,043	2,700	11.8	13.8	12.7
E9.A5.13	8,511	1,917	4,038	2,556	6.1	8.6	10.4
Evangelina	8,117	3,924	1,913	2,280	6.7	5.3	7.0
Northeastern	6,344	270	2,844	3,230	6.1	6.2	10.1
Average	15,660	5,370	5,903	4,388	10.0	10.0	11.0

Table 2. Cultivar observations and comments.

Cultivar	Observations and comments.
Jewel	Great appearance, uniform size, fairly firm, pleasant strawberry flavor
88.74.1	Primary berries very large with irregularly shape, limited runner production
91.80.2	Round to heart-shaped berries had prominent seed
St. Pierre	Nice uniform berry shape, bright light red fruit color
Cavendish	Firm berries with uniform shape but tended to color unevenly
Canoga	Attractive glossy red berries, firm texture, heart shaped
Seneca	Berries exceptionally firm, tart
Darselect	Bright red berry color, pleasant sweet flavor
Allstar	Light red coloration, irregular globular shape but great flavor
Eros	Light red color, fairly firm, noted a lot of grey mold on berries in 2006
Ovation	Attractive bright red with uniform conical shape
Honeoye	Dark red berries were small in this trial and tart
Brunswick	Soft dark red berries with rounded shape
Clancy	Dark red berries were attractive, firm texture and good flavor
Cabot	Large berries with pronounced conical shape, weak runner formation
E9.A5.13	Soft berries, developed severe skin cracking during wet weather
Evangelina	Nice looking but small dark red berries with pointed cone shape
Northeastern	Bright red berries were heart shaped